

# MBRS320T3, MBRS330T3, MBRS340T3, MBRS360T3

Preferred Devices

## Surface Mount Schottky Power Rectifier

...employing the Schottky Barrier principle in a large area metal-to-silicon power diode. State-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes, in surface mount applications where compact size and weight are critical to the system.

- Small Compact Surface Mountable Package with J-Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop  
(0.5 Volts Max @ 3.0 A,  $T_J = 25^\circ\text{C}$ )
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guardring for Stress Protection

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 217 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes:  
260°C Max. for 10 Seconds
- Shipped in 16 mm Tape and Reel, 2500 units per reel
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- Marking: B32, B33, B34, B36

### MAXIMUM RATINGS

Please See the Table on the Following Page



ON Semiconductor™

<http://onsemi.com>

**SCHOTTKY BARRIER  
RECTIFIERS  
3.0 AMPERES  
20, 30, 40, 60 VOLTS**



SMC  
CASE 403  
PLASTIC

### MARKING DIAGRAM



B3x = Device Code  
x = 2, 3, 4 or 6  
Y = Year  
W = Work Week

### ORDERING INFORMATION

Device	Package	Shipping
MBRS320T3	SMC	2500/Tape & Reel
MBRS330T3	SMC	2500/Tape & Reel
MBRS340T3	SMC	2500/Tape & Reel
MBRS360T3	SMC	2500/Tape & Reel

Preferred devices are recommended choices for future use and best overall value.

# MBRS320T3, MBRS330T3, MBRS340T3, MBRS360T3

## MAXIMUM RATINGS

Rating	Symbol	MBRS320T3	MBRS330T3	MBRS340T3	MBRS360T3	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	20	30	40	60	Volts
Average Rectified Forward Current	$I_{F(AV)}$	3.0 @ $T_L = 100^\circ\text{C}$ 4.0 @ $T_L = 90^\circ\text{C}$				Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	80	80	80	80	Amps
Operating Junction Temperature	$T_J$	- 65 to +125	- 65 to +125	- 65 to +125		$^\circ\text{C}$

## THERMAL CHARACTERISTICS

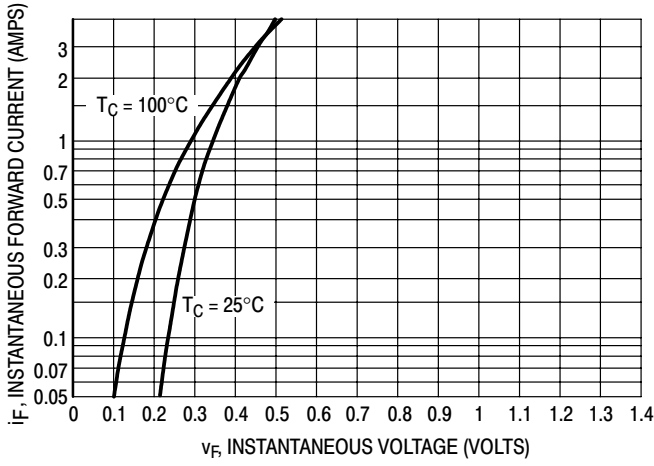
Thermal Resistance — Junction to Lead	$R_{\theta JL}$	11	11	11	11	$^\circ\text{C/W}$
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## ELECTRICAL CHARACTERISTICS

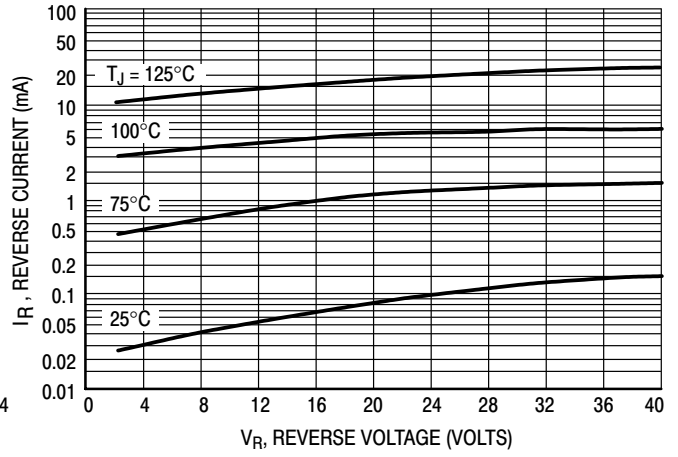
Maximum Instantaneous Forward Voltage (Note 1.) ( $i_F = 3.0\text{ A}$ , $T_J = 25^\circ\text{C}$ )	$V_F$	0.50	0.50	0.525	0.740	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 100^\circ\text{C}$ )	$i_R$	2.0 20	2.0 20	2.0 20	0.5 20	mA

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

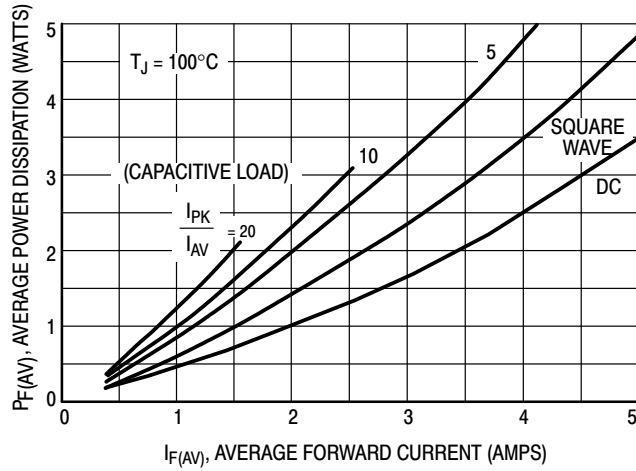
**MBRS320T3, MBRS330T3, MBRS340T3, MBRS360T3**



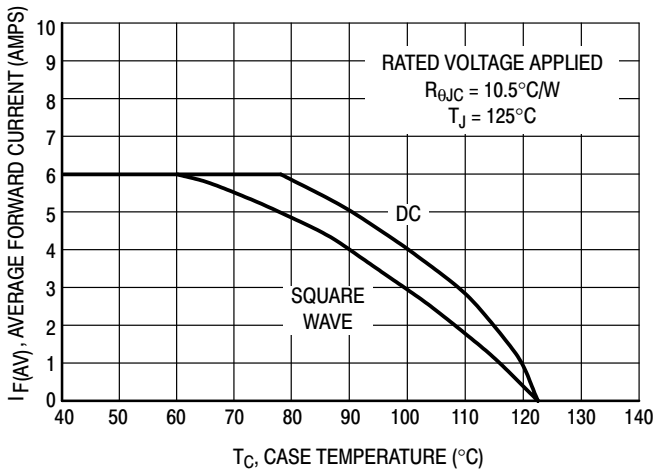
**Figure 1. Typical Forward Voltage**



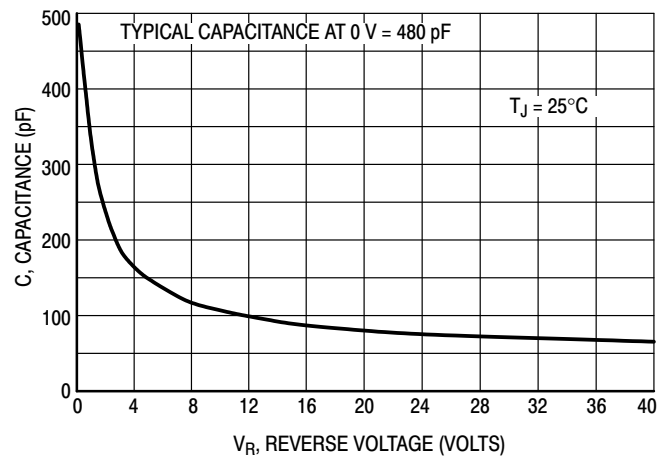
**Figure 2. Typical Reverse Current**



**Figure 3. Power Dissipation**



**Figure 4. Current Derating (Case)**

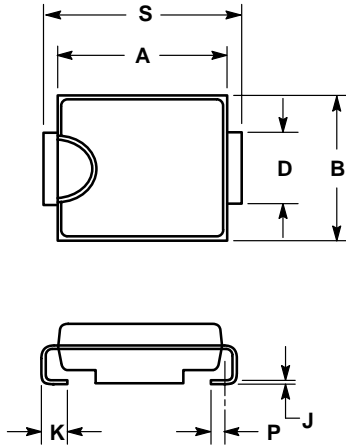


**Figure 5. Typical Capacitance**

# MBRS320T3, MBRS330T3, MBRS340T3, MBRS360T3

## PACKAGE DIMENSIONS


SMC  
PLASTIC PACKAGE  
CASE 403-03  
ISSUE B



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.260	0.280	6.60	7.11
B	0.220	0.240	5.59	6.10
C	0.075	0.095	1.90	2.41
D	0.115	0.121	2.92	3.07
H	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
P	0.020 REF		0.51 REF	
S	0.305	0.320	7.75	8.13

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